DRILL HOLES

BORDER REV. DATE: June 1, 2004

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PROJECT DESCRIPTION

I. GENERAL

This project involves the reconstruction of an existing Traffic Control Signal with interconnect at the intersection of MD 2 (Governor Richtie Hwy) and MD 710 (Ordinance Rd) / Ordinance Rd in Anne Arundel County. The existing strain pole Traffic Signal shall be replaced with a new mast arm Traffic Signal. Additionally, video detection shall be used for all approaches. Countdown pedestrian signals with audible pushbuttons shall be installed across the north-south legs of this intersection. Countdown pedestrian heads shall be installed across the east-west appraoches. MD 2 (Governor Richtie Hwy) is assumed to run a north-south direction.

II. INTERSECTION OPERATION

1. The intersection shall continue to operate in a NEMA six-phase, semi-actuated mode, with the MD 2 (Governor Richtie Hwy)approaches running concurrently. The Exclusive left turn phases shall remain in operation for both approaches of MD 2 (Governor Richtie Hwy). Countdown pedestrian phases with audible pushbutton actuation shall be provided across both legs of MD 2 (Governor Richtie Hwy). Countdown pedestrian phases across the MD 710 (Ordinance Rd) / Ordinance Rd approaches shall be placed on recall. Farside sampling stations (via video detection) shall be provided on both legs of MD 2 (Governor Richtie Hwy) at this intersection. The MD 710 (Ordinance Rd) / Ordinance Rd approaches shall also run concurrently.
2. A full-traffic-actuated, eight-phase controller with video interface and all necessary equipmentg housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.
3. SHA signal shop shall install APS control unit into controller cabinet. The Contractor shall deliver the Control Unit and audible pushbuttons to the SHA Signal Shop for testing and programming.

III. SPECIAL NOTES

1. The Contractor shall be responsible for terminating all signal cables, excluding interconnect, to the appropriate terminals and shall properly label each cable.
2. All controller cabinet wiring will be performed by the S.H.A. Signal Shop Contact Mr. Ed Rodenhizer at (410) 787-7652 seventy-two hours in advance of intended work.
3. All underground and overhead utilities shown on these plans are schematic only and may not be complete. The Contractor shall be responsible for notifying Miss Utility prior to construction so that all utilities may be located in the field. If the Contractor perceives that a conflict between the utilities and the traffic signal will occur, the Contractor shall notify the Project Engineer immediately so that the conflict may be resolved.
4. Upon completion of this project, the Contractor shall notify Mr. Robert Snyder at (410) 787-7631 to arrange for the phone line installation. The Contractor is to provide Mr. Robert Snyder with the nearest street address, zip code and phone number.

5. APS will function as follows:

TO CROSS MD 2 (GOVERNOR RITCHIE HWY)

a When pedestrian locates and presses the pushbutton for an extended time, the pushbutton unit will announce the following message " Wait to cross Governor Ritchie at West Ordinance and East Ordinance."

b. When the WALK phase begins, the pushbutton unit will provide a rapid tick which will last for the duration of the WALK phase.

The contact persons for District #5 are as follows:

Ms. Kim Tran
Assistant District Engineer - Traffic
Phone: (410) 841-1819

Mr. John Mays
Assistant District Engineer - Maintenance
Phone: (410) 841-1013

Mr. Joe Horty
Assistant District Engineer - Utility
Phone: (410) 841-1005

Mr. Richard L. Daff, Sr.
Chief, Traffic Operations Division
Phone: (410) 787-7630

Mr. Ed Rodenhizer
Signal Shop
410-787-7652

Mr. Sonny Bailey
Sign Shop
410-787-7676

The power company representative is:

Baltimore Gas and Electric
7317 Parkway Drive South
Hanover, MD 21076
410-850-4620

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY S.H.A..

ITEM NO.	DESCRIPTION	QUANTITY
9042	Controller ASC II with telemetry	1 EA
9044	Controller cabinet, size "6"	1 EA
9086	Video detection interface equipment: 1-4 cameras (To be installed by signal shop).	1 EA
9571	Sheet aluminum signs to consist of: (mast arm or pole mount)	184 SF
	D3-2 "(arrow) W. Ordinance RD / E. Ordinance RD (arrow)\ (arrow) E. Ordinance RD / W. Ordinance RD (arrow)" (variable x 16") dual faced mast arm.	2 EA
	D3-2 "Gov. Ritchie Hwy." sign (variable x 16") dual faced mast arm.	2 EA
	R3-5R "RIGHT TURN ONLY" sign, (30" x 36") mast arm.	1 EA
	R3-5L "LEFT TURN ONLY" sign, (30" x 36") mast arm. mounted.	6 EA
	R3-6 "LEFT TURN AND THRU" sign, (30" x 36") mast arm.	2 EA
	R3-6R "RIGHT TURN AND THRU" sign, (30" x 36") mast arm.	1 EA
	R3-5a THRU" sign, (30"x 36") mast arm.	1 EA
	GUIDE SHIELD ASSEMBLY (36"x75") pole mounted. M3-1 "NORTH"(30"X15") M1-5 "MD 2"(36"X36") M6-1 "left arrow "(30"X24")	1 EA
	GUIDE SHIELD ASSEMBLY (36"x75") pole mounted. M3-2 "SOUTH"(30"X15") M1-5 "MD 2"(36"X36") M6-1 "left arrow "(30"X24")	1 EA

EQUIPMENT LIST (CONT.)

A. EQUIPMENT TO BE SUPPLIED BY S.H.A..

ITEM NO.	DESCRIPTION	QUANTITY
	GUIDE SHIELD ASSEMBLY (24"x51") pole mounted. M3-1 "NORTH"(24"X12") M1-5 "MD 2"(24"X24") M6-1 "right arrow "(21"X15")	1 EA
	GUIDE SHIELD ASSEMBLY (24"x51") pole mounted. M3-3 "SOUTH"(24"X12") M1-5 "MD 2"(24"X24") M6-1 "right arrow "(21"X15")	1 EA
	Pedestrian education R10-4(1) mod sign. (Note: Sign to read "PUSHBUTTON TO CROSS GOVERNOR RITCHIE HWY")	[1] 2 ✱ EA

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
1001	Maintenance of traffic per assignment.	3 EA
2002	Test Pit Excavation	14 C.Y.
5001	Heat applied white permanent preformed thermoplastic pavement marking arrow. (left)	3 EA
5001	Heat applied white permanent preformed thermoplastic pavement marking arrow. (thru-left)	3 EA
5001	Heat applied white permanent preformed thermoplastic pavement marking arrow. (right)	3 EA
[1] 5002	12" white heat applied permanent preformed thermoplastic pavement marking.	385 ~~740~~ L.F.
5003	Removal of existing permanent marking letters, symbols, arrows and numbers.	9 L.F.
5005	24" white heat applied permanent preformed thermoplastic pavement marking.	205 L.F.
5007	Removal of existing permanent pavement line markings	205 L.F.
6001	**Standard type "A" combination curb and gutter, 12" gutter pan, 8" depth**	**300 L.F.**
[1] 6002	5" concrete sidewalk.	1000 ~~1250~~ S.F.
8003	2 wire Central Control unit	1 EA
[1] 8010	Audible/tactile pedestrian pushbutton station & signs.	2 ✱ EA
[1] 8011	Breakaway pedestal pole (10')	4 ✱ EA
[1] 8014	LED 16" countdown pedestrian signal heads.	4 ✱ EA
8015	Mast arm pole & 38' mst arm. any "T" dimension.	1 EA
8017	Mast arm pole & 70' mst arm. any "T" dimension.	2 EA
8018	Mast arm pole & 50' mst arm. any "T" dimension.	1 EA
8020	Noninvasive detector (any length lead-in cable).	5 EA
8021	Remove and dispose of existing material & equipment per assignment.	1 EA
8024	Disconnect, pull back and reroute cable.	270 L.F.
8025	Video detection camera arm. and cable up to 500'	4 EA
8029	3" electrical conduit riser schedule 80 (PVC).	30 LF
8030	Relocate existing sign.	5 S.F.
8031	Disconnect, pull back and reroute cable.	80 L.F.
8033	Schedule 80 rigid PVC conduit up to 4" - bored.	130 L.F.
8034	Schedule 80 rigid PVC conduit up to 4" - slotted.	210 L.F.
8035	Schedule 80 rigid PVC conduit up to 4" - trenched.	505 L.F.
8037	**Detectable Warning Surfaces**	**200 S.F.**
8038	Install overhead or ground mounted sign.	184 SF
8040	No. 6 AWG stranded bare copper ground wire.	760 L.F.
8041	Weatherhead, 3 inch	1 EA
8042	Embedded Metered service pedestal.	1 EA
8044	Electrical cable 1-conductor No. 4 AWG THHN/THWN.	120 L.F.
8046	Furnish and install electrical handhole.	7 EA
8050	12" LED signal head section.	52 EA
[1] 8054	Electrical cable - 2 conductor (No. 14 AWG).	260 ~~710~~ L.F.
[1] 8056	Electrical cable - 5 conductor (No. 14 AWG).	1185 ~~2135~~ L.F.
8057	Electrical cable - 7 conductor (No. 14 AWG).	1920 L.F.
8065	Install controller and cabinet base mount.	1 EA

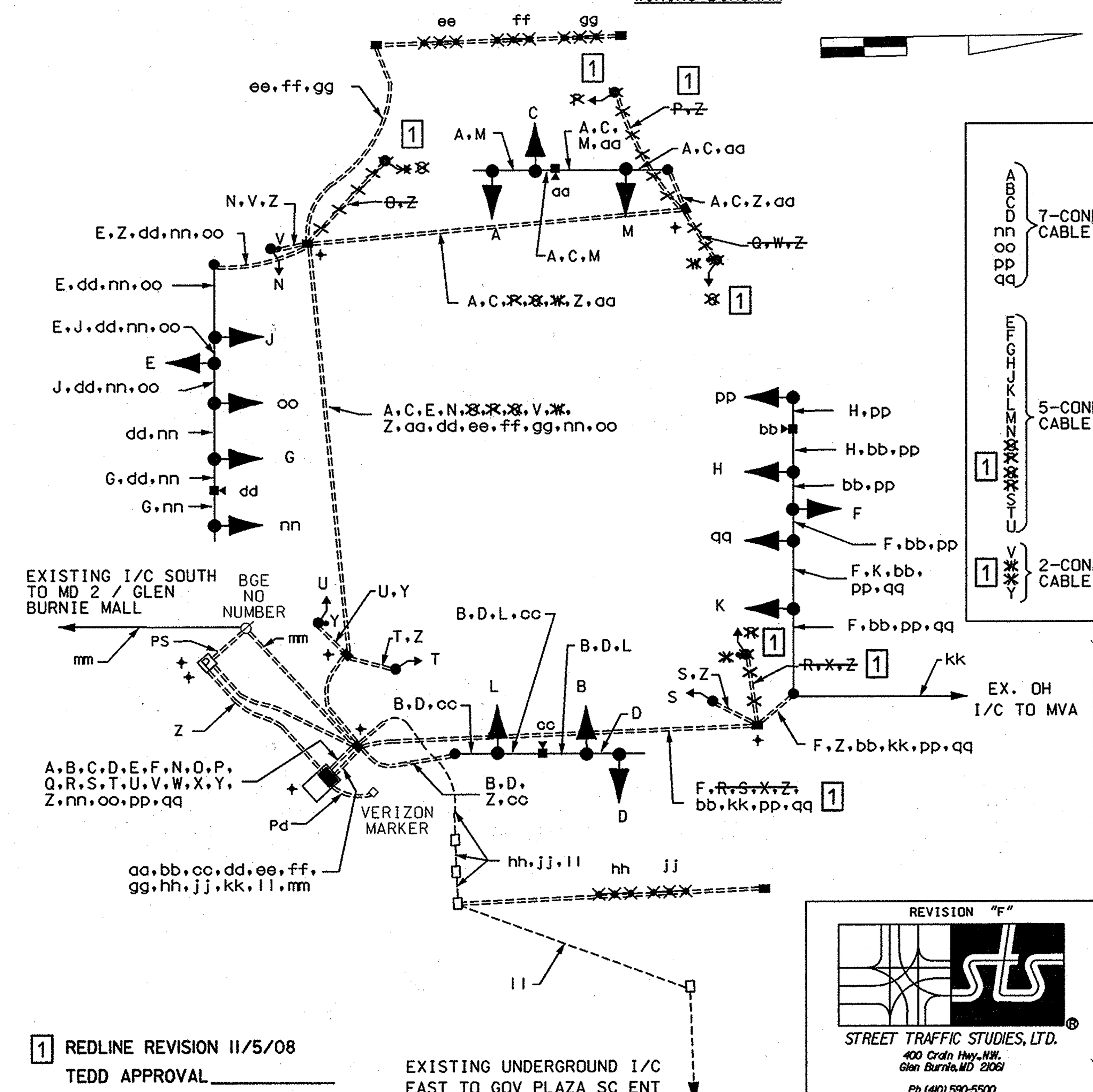
C. EQUIPMENT TO BE REMOVED

SHA Forces shall remove the controller and all auxilliary equipment from the controller cabinet. Contractor shall return existing video cameras to the SHA Signal Shop. The cabinet and all other removed signal materials are to become property of the contractor.

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17 [1]	18	19	20 [1]	21 [1]	22	23	24 [1]
PHASE 1 & 5	◄G–	◄G–	◄G–	R	R	◄G–	◄G–	◄G–	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
CHANGES TO PHASES 1 & 6, 2 & 5 OR 2 & 6																								
PHASE 1 & 6	◄G–	◄G–	◄G–	G	G	◄R–	◄R–	◄R–	R	R	R	R	R	R	R	R	DW	WK	WK	DW	DW	DW	DW	DW
1 & 6 CHANGE	◄Y–	◄Y–	◄Y–	G	G	◄R–	◄R–	◄R–	R	R	R	R	R	R	R	R	DW	WK	WK	DW	DW	DW	DW	DW
PHASE 2 & 5	◄R–	◄R–	◄R–	R	R	◄G–	◄G–	◄G–	G	G	R	R	R	R	R	R	WK	DW	DW	WK	DW	DW	DW	DW
2 & 5 CHANGE	◄R–	◄R–	◄R–	R	R	◄Y–	◄Y–	◄Y–	G	G	R	R	R	R	R	R	WK	DW	DW	WK	DW	DW	DW	DW
PHASE 2 & 6	◄R–	◄R–	◄R–	G	G	◄R–	◄R–	◄R–	G	G	R	R	R	R	R	R	WK	WK	WK	WK	DW	DW	DW	DW
PED CLEAR / COUNTDOWN	◄R–	◄R–	◄R–	G	G	◄R–	◄R–	◄R–	G	G	R	R	R	R	R	R	FL/DW	FL/DW	FL/DW	FL/DW	DW	DW	DW	DW
2 & 6 CHANGE	◄R–	◄R–	◄R–	Y	Y	◄R–	◄R–	◄R–	Y	Y	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 3	◄R–	◄R–	◄R–	R	R	◄R–	◄R–	◄R–	R	R	G / ◄G–	G / ◄G–	G	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
3 CHANGE	◄R–	◄R–	◄R–	R	R	◄R–	◄R–	◄R–	R	R	Y	Y	Y	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4	◄R–	◄R–	◄R–	R	R	◄R–	◄R–	◄R–	R	R	R	R	R	G / ◄G–	G / ◄G–	G	DW	DW	DW	DW	DW	DW	DW	DW
4 CHANGE	◄R–	◄R–	◄R–	R	R	◄R–	◄R–	◄R–	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 3 ALT	◄R–	◄R–	◄R–	R	R	◄R–	◄R–	◄R–	R	R	G / ◄G–	G / ◄G–	G	R	R	R	DW	DW	DW	DW	DW	WK	WK	DW
PED CLEAR / COUNTDOWN	◄R–	◄R–	◄R–	R	R	◄R–	◄R–	◄R–	R	R	G / ◄G–	G / ◄G–	G	R	R	R	DW	DW	DW	DW	DW	FL/DW	FL/DW	DW
3 ALT CHANGE	◄R–	◄R–	◄R–	R	R	◄R–	◄R–	◄R–	R	R	Y	Y	Y	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 ALT	◄R–	◄R–	◄R–	R	R	◄R–	◄R–	◄R–	R	R	R	R	R	G / ◄G–	G / ◄G–	G	DW	DW	DW	DW	WK	DW	DW	WK
PED CLEAR / COUNTDOWN	◄R–	◄R–	◄R–	R	R	◄R–	◄R–	◄R–	R	R	R	R	R	G / ◄G–	G / ◄G–	G	DW	DW	DW	DW	FL/DW	DW	DW	FL/DW
4 ALT CHANGE	◄R–	◄R–	◄R–	R	R	◄R–	◄R–	◄R–	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
FLASHING OPERATION	FL/◄R–	FL/◄R–	FL/◄R–	FL/Y	FL/Y	FL/◄R–	FL/◄R–	FL/◄R–	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK

WIRING DIAGRAM



[1] REDLINE REVISION 11/5/08

TEDD APPROVAL__________

WIRING KEY

A, B, C, D, nn, oo, pp, qq } 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)

E, F, G, H, J, K, L, M, N, ~~O~~, ~~P~~, ~~Q~~, S, T, U } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G) [1]

V, ~~W~~, ~~X~~, Y } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G) [1]

Z - STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)

aa, bb, cc, dd } CONTROL CABLE (CAMERA TO CONTROLLER) UP TO 500'

ee, ff, gg, hh, jj } NONINVASIVE MICROLOOP LEAD-IN CABLE (UP TO 1000')

kk, ll, mm } EXISTING 12-PAIR INTERCONNECT CABLE

nn - 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)

PS - PROPOSED UNDERGROUND SERVICE TO BE INSTALLED BY BGE

Pd - PROPOSED PHONE DROP

\+ - GROUND ROD

REVISION "F"

STREET TRAFFIC STUDIES, LTD.
400 Crain Hwy.,N.W.
Glen Burnie,MD 21061
Ph (410) 590-5500
Fax (410) 590-6637

5486GI.DGN T-144

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD RTE 2 (GOVERNOR RITCHIE HWY) AND MD 710 (ORDNANCE RD)

GLEN BURNIE, MARYLAND

GENERAL INFORMATION SHEET

SCALE NONE DATE 8-20-08 CONTRACT NO. XX4475185

DESIGNED BY J.W.A. COUNTY ANNE ARUNDEL
DRAWN BY R.C. LOGMILE 02000238.59
CHECKED BY ____ TIMS NO. I891
F.A.P. NO. ____ TOD NO. ____

TS NO. 251F DRAWING NO. 2 OF 2 SHEET NO. OF

PLOTTED: $DATETIME$
FILE: $FILE$

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